SPECIAL FEATURE

The theory of community based health and safety programs: a critical examination

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This paper examines the theoretical underpinning of the community based approach to health and safety programs. Drawing upon the literature, a theory is constructed by elucidating assumptions of community based programs. The theory is then put to test by analyzing the extent to which the assumptions are supported by empirical evidence and the extent to which the assumptions have been applied in community based injury prevention practice. Seven principles representing key assumptions of the community based approach to health and safety programs are identified. The analysis suggests that some of the principles may have important shortcomings. Programs overwhelmingly define geographical or geopolitical units as communities, which is problematic considering that these entities can be heterogeneous and characterized by a weak sense of community. This may yield insufficient community mobilization and inadequate program reach. At the same time, none of the principles identified as most plausible appears to be widely or fully applied in program practice. The implication is that many community based health and safety programs do not function at an optimum level, which could explain some of the difficulties in demonstrating effectiveness seen with many of these programs.

Community based programs have become an important strategy to enhance health and safety since the North Karelia, Stanford Five City, Minnesota Heart Health, and Pawtucket Heart Health programs were initiated in the 1970s and 1980s to reduce high community rates of cardiovascular disease. Since then, the belief that the community based approach is beneficial appears to have become a deeply held conviction in public health. As noted by Cheadle and colleagues,[1] ''It is almost an article of faith that locating programs in the community and involving community members in planning, implementation, and evaluation can be an effective strategy for improving population health'' (see page 240).

However, despite the wide application of community based health and safety programs during the last 30 years, there is a paucity of evaluations from which to obtain evidence regarding effectiveness of community based health and safety programs. The present evidence from both the health promotion and injury prevention fields is inconsistent, with many programs demonstrating modest or no effects at all.[2–17] This weak evidence has been attributed to a number of reasons, including insufficient resources, poorly implemented programs, lack of program reach, methodological difficulties in study design and analysis that lead to problems in demonstrating convincing results, and unrealistically high expectations of what can be achieved through these programs.[3–8 14]

This paper examines whether there are shortcomings in the theoretical underpinning of the community based approach that could explain the lack of strong evidence of the effectiveness of health and safety programs. Drawing upon the literature, a theory is constructed by elucidating explicit and implicit assumptions of community based programs. The theory is then put to test by analysing the extent to which the assumptions are supported by empirical evidence and the extent to which the assumptions have been applied in community based injury prevention practice.

PRINCIPLES OF THE COMMUNITY BASED APPROACH

While contemporary community based health and safety programs do not conform rigidly to a set of predefined criteria, most community based programs are based on a number of key assumptions. The seven principles presented here represent important assumptions of the community based approach. Although described as seven distinct principles, there is considerable overlap between the individual principles. Most of the principles are a matter of degree rather than all-or-none phenomena.

Community focus

The community based approach recognises the community as a unit of identity and the appropriate focal point for health and safety programs; the community is both the target and the catalyst for change.[18 19] This community focus is due to the realization that humans live in, are shaped by, and in turn shape the environment in which they live.[20] Therefore, individuals cannot be considered separately from their environment.[21] People's health and safety related knowledge, attitudes, behaviors, and skills reflect their life experiences and these experiences are determined by broader institutional structures, cultural forces, and social relations within the community.[20] This means that explanatory models centered on intrapersonal determinants are of limited value for the understanding of

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individuals' health and safety; such an understanding can be achieved only if the context in which people live is taken into account.[18 22 23]

Members of a community are assumed to have a sense of community, which means that they have a sense of belonging to and of sharing common aspirations with the other members of the community.[18 24 25] It has been suggested that most people yearn to be part of a larger network of relationships that give expression to their needs for intimacy, usefulness, and belonging[26] and that people tend to self-segregate—that is, interact with others like them because of shared interests, similar cultural norms, and greater empathy toward individuals who remind them of themselves.[27]

A community can be understood both in terms of a geographical location (town, city, municipality, etc) and a relational entity, which refers to qualities of human interaction and social ties that draw people together.[28] The two usages of the term are not mutually exclusive and the sense of community concept applies equally to the geographical and relational notion of community.[29] However, modern society develops community around interests and skills more than around locality, implying that communities primarily are relational entities rather than geographically defined localities; what brings people together are common interests and shared values and norms around which social relationships develop.[18 25 28 29]

Community member participation

A key element of the community based approach is the principle of participation—that is, the involvement of community members in defining the health/safety problem and finding the solutions. Community member participation refers to ''the social process of taking part (voluntarily) in either formal or informal activities, programs, and/or discussions to bring about a planned change or improvement in community life, services and/or resources'' (Bracht *et al*, page 201).[30] Community member participation represents a bottom-up (or grassroots) approach to program planning and decision making. The 1978 World Health Organisation (WHO) Declaration of Alma Ata recognized that people must be actively involved in the process of promoting and protecting their health.[31]

A number of reasons to promote community member involvement in community based programs have been proposed. Participation is assumed to lead to individual empowerment, as people gain skills in assessing needs, setting priorities, and gain control over their environment.[32] The principle of relevance states that change will be greatest when programs ''start where the people are'' (Durham, page 143)[33] and engage community members for their knowledge of what matters to the community population.[34 35] Involvement by community members is a way to incorporate local values and attitudes into the program and to build the layman's perspective into the program. Community member involvement can also provide access to local leaders, resources, and technical skills not otherwise available.[30] Moreover, this participation engenders a sense of identification and continuing responsibility for the program, often referred to as the principle of ownership.[36] Program support by local opinion leaders enhances confidence in the benefits of the program and makes it easier for individuals to accept the program.[9]

Intersectoral collaboration

A central element of the community based approach is collaboration among different community sectors and organizations for a common purpose.[7 37] Intersectoral collaborative efforts, often referred to as community coalitions, are composed of ''individuals representing diverse organisations, factions, or constituencies within the community who agree to work together to achieve a common goal'' (Butterfoss *et al*, page 66).[38] An important rationale for intersectoral collaboration is that a great deal of that which has a direct impact on health and safety is outside the direct purview of the health sector. The need for action by sectors other than the health sector was emphasized in the 1978 Declaration of Alma Ata and has since been addressed in several WHO documents.[39]

Representation from multiple community sectors, organizations, groups, and key individuals is valued because of the collaborators' capacity to translate the health and safety messages into the local culture.[40] A community coalition can increase the credibility for the program, as representation from different sectors enables an understanding of and a response to ''true'' community needs.[41] Intersectoral collaboration is a way to insure local ownership and long term maintenance of the program.[30] It is assumed that community coalitions can achieve a vision that would not otherwise be possible to obtain as separate actors working independently.[42] By working together, individual entities can better coordinate services and thus provide more efficient use of local resources and reduce redundancy in community services.[42 43]

Substantial resource requirements

The challenges involved in establishing and maintaining effective community based health and safety programs are considerable and require a substantial resource investment.[1 10 44] The importance of identifying and building on existing community resources is recognized. Although the community's internal resources can be seen as the raw materials for program operation, community based health and safety programs may also require resources and skills available from outside of the community.[18] External institutions can serve as partners to community based programs by providing technical assistance, facilitating relationships with political and funding institutions, legitimising existing activities, and providing financial support or leverage to raise additional funds.[1]

Long term program view

The community based approach recognizes the importance of taking a long term view of health and safety problems and their solution. Developing collaborative relationships with local organizations is a slow, gradual process, often requiring years for program management to establish an environment of trust, involvement, and true understanding of local health and safety concerns.[10 42 45] Communities are more likely to commit themselves to developing a program when it is not seen as a temporary project or experiment. Programs that have a high visibility for a short period but fail to be sustained create a sense of resentment for communities.[46]

Furthermore, achieving communitywide health/safety effects is a lengthy process because large segments of the population must be exposed to the program.[47] There is often a latency period between the beginning of a program and its effects on population health and safety. Since the effects manifest themselves over a longer time frame, long term program viability is a prerequisite for meaningfully assessing effects.[48 49] Program sustainability, therefore, is a necessary condition to achieve community based health and safety program effectiveness.[45]

Multifaceted interventions

The community based approach uses both behavioral and structural (environmental) interventions addressed at multiple risk factors in multiple settings and at multiple community levels.[50] This multifaceted strategy is intended to maximize the effect of the program throughout the community by taking advantage of a synergy that is assumed to exist among different program components.[21 44]

Multifaceted interventions may be planned and implemented within the framework of numerous individual, organizational, and community-level change models and theories, including Bandura's social learning theory, social marketing theory, Rogers' innovation-diffusion theory, community stages of readiness, and numerous health behavior models and theories.[21 51–54]

Population outcome

The multifaceted interventions of community based health and safety programs are aimed at achieving communitywide health and safety effects; a population outcome is the goal.[2 20] Hence, the approach directs many interventions towards the general population in the community rather than to high risk individuals.[9] The population based strategy is an attempt to control the determinants of morbidity and mortality and to lessen risk across the population.[55] While this strategy may be of little use to a given individual, with a resultant prevention paradox,[56] even smaller effects can be meaningful at the community level, where a modest reduction in the level of risk can have a significant public health impact.[9] In practice, many programs combine elements of population based and high risk strategies in order to more effectively reach community subgroups.[7 9 44]

EXAMINING THE THEORY

Health and safety programs can fail for two reasons. Failure of theory occurs when programs activate the causal mechanisms necessary to achieve the intended effects but this process does not cause the desired results due to limitations in the underlying theory. Failure of implementation happens when programs do not set the presumed causal process in motion.[57] This means that community based health and safety programs can fail either because of shortcomings inherent in the theoretical principles and/or because plausible principles are not sufficiently applied in program practice.

Failure of theory and application

The community focus principle is based on the premise that the community is characterized by members who have a sense of community. Hence, a population may be called a community to the extent that its members have a sense of identification and emotional connection to other members of the community. However, community based health and safety programs overwhelmingly define community as a geographical or geopolitical unit—for example, a town, city, municipality, or county,[58] which may be larger and far more diverse and heterogeneous than relationally defined communities. Research shows that community heterogeneity (for example, in terms of ethnicity, religion, income, educational and work experience) reduces civic engagement and participation—for example, measured by how people allocate their time, money, voting, and willingness to take risks to help others.[59]

Community mobilization to solve health and safety problems is more likely to occur if a community sees itself as a community.[18 60] People with a strong sense of community more easily organize themselves because a common identity and a shared fate are important bases for initial group formation.[28] A weak sense of community resulting in limited community mobilization has been identified as an important reason for modest results in some community based injury prevention programs.[61 62]

Geographical communities include people whose primary identity is based on many different factors—for example, culture, interest, social class, ethnicity, gender, or sexual orientation.[63] This implies that defining the health/safety problem and finding solutions that have communitywide relevance and effects will be more difficult in geographically defined localities, as the risks and various population characteristics may vary considerably within the community. It is notable that some of the most successful community based programs have been implemented in Scandinavian communities, which are highly homogeneous in terms of ethnicity, culture, and socioeconomic status.[8 16] More heterogeneous communities in Australia and New Zealand have had difficulties replicating this success.[61 64 65]

The degree of interconnectedness among the individuals is likely to be higher in smaller communities. This is a key reason why some researchers have proposed that between 6000 and 20 000 people are the appropriate catchment areas for community based programs.[66] Despite this, many community based programs have been implemented in very large communities. For instance, the average population size of a community designated a Safe Community by the international WHO Safe Community network of community based injury prevention programs is 170 000 (Bourne *et al*, unpublished data). The WHO Safe Communities vary greatly in size, from the small town of Os, Norway, with 2150 inhabitants, to the large city of Dallas, USA, with 2 million people.[67] The sense of community cannot be expected to be as strong in some of the largest, most diverse areas as it would be in smaller areas, where people are likely to interact frequently with each other.

The concept of community and how such an entity is defined will influence the validity of some of the other principles of the community based approach. For example, it is highly questionable whether programs in large cities or areas can live up to the bottom-up ideal of the community member participation principle. Moreover, it may be difficult to achieve favorable population-level results in large, heterogeneous communities considering that many community based health promotion and injury prevention programs lack tailored interventions to reach different segments or subgroups of the communities.[4]

The population outcome principle postulates that the goal of health and safety programs is population-level effects. Systematic reviews of community based injury prevention programs show that programs narrowly targeting specific injury categories (for example, certain injury types and/or age groups) can be highly successful if effectiveness is measured in terms of reduction of the incidence of the targeted categories.[6 13 17] However, it is quite possible to obtain highly favorable results for specifically targeted injury categories without necessarily lowering the total injury incidence of the community if these categories account for a small proportion of the injuries occurring in a community.

Failure of theory

Community member participation and intersectoral collaboration are cornerstones of the community based approach, yet little research has been conducted to examine the relation between community involvement and program effectiveness.[41 68 69] The findings thus far offer ''only marginal evidence'' that community involvement yields health status changes (Kreuter *et al*, page 49)[32] and the results are ''insufficient to make strong conclusions about the effects of partnerships on population-level outcomes'' (Roussos and Fawcett, page 375).[70]

Failure of application

Community based program theory emphasizes the importance of an ecological perspective, with multiple interventions delivered at multiple levels and in multiple settings within the community. There is considerable evidence that multifaceted programs are indeed more effective than narrowly focused efforts.[58 71–74] Still, empirical findings suggest that there is a wide variation in the degree to which community based health and safety programs actually apply an ecological perspective.[7 22] Single setting or single strategy

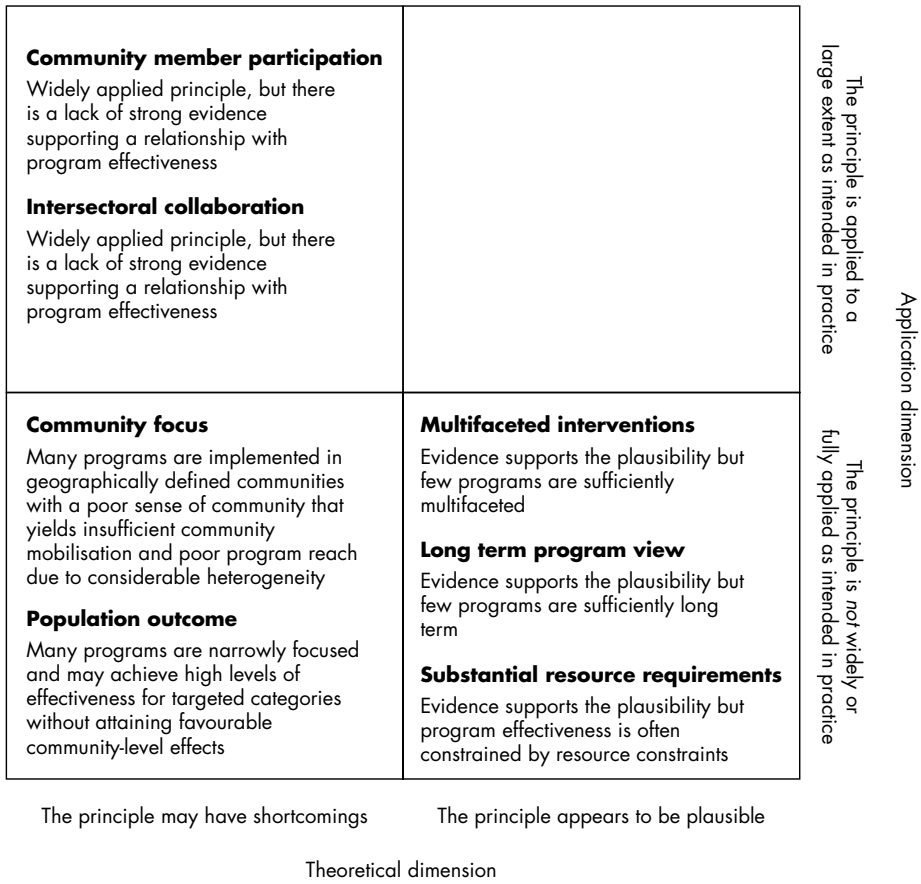

Figure 1 Theoretical plausibility and practical application of the seven principles of the community based approach to health and safety programs.

programs outnumber multifaceted programs, as practitioners still prefer to target intrapersonal determinants of health rather than unhealthy aspects of people's environments.[22]

Two other important features of the community based approach are the importance of taking a long term program view and mobilizing substantial resources to establish, deliver, and sustain programs. Insufficient program duration has been identified as an important factor that explains the lack of significant effectiveness of many community based health and safety programs.[4 7–9] Unfortunately, few evaluations of community based health and safety programs provide explicit or detailed information on the resource use, making it difficult to determine to what extent resources influence program effectiveness. Still, solid empirical evidence demonstrates the utmost importance of both financial and intangible resources for program sustainability, which is a requirement for achieving program effectiveness.[45 47 49 75 76]

DISCUSSION

This analysis of the community based approach to health and safety programs suggests that the theoretical underpinning of this approach has important shortcomings, implying that many community based health and safety programs do not function at an optimum level. The extent to which the different principles are applied (as prescribed by theory) in program practice can be illustrated by a two-dimensional diagram (fig 1), with an application dimension indicating the degree to which each principle is applied in practice and a theory dimension involving an assessment of the extent to which each principle appears to be theoretically sound.

Whereas the importance of multifaceted interventions, long term program view, and substantial resource requirements to attain effectiveness is well supported by empirical evidence, the principles of community member participation and intersectoral collaboration are somewhat less convincing, as there is a lack of research that links program effectiveness to this type of community involvement.

The principles of community focus and population outcome principles have theoretical limitations and tend to be applied in injury prevention practice without adherence to the principles' underlying assumptions. Programs to a great extent define geographical or geopolitical units as communities. However, because these entities can be highly heterogeneous and be characterized by a weak sense of community, it can result in insufficient community mobilization and inadequate reach for many programs. Many programs are narrowly focused and may achieve high levels of effectiveness for targeted injury categories without attaining favorable community-level effects.

The findings point to the critical importance of devoting sufficient resources to mounting and running programs. This will allow for comprehensive community assessment and facilitate application of the principles of multifaceted interventions and long term program perspectives in order to achieve a favorable population outcome. However, even if programs were more lavishly funded, the extent to which local health and safety problems can be solved mainly or merely by mobilizing local efforts may be questioned. Local communities are increasingly affected by wide, far reaching societal trends. Indeed, in a world where societies are becoming increasingly heterogeneous and populations more mobile, as people are becoming ''cosmopolitans'' rather than ''locals'', the local, geographically defined community may lose much of its decisive influence over the lives of its population. The globalization process represents a serious challenge to the community based approach.

Key points

- Despite wide application of community based health and safety programs during the last 30 years, there is a paucity of evaluations from which to obtain evidence regarding the effectiveness of the community based approach.
- Many of the underlying assumptions of the community based approach have important shortcomings, which could explain some of the difficulties in demonstrating effectiveness seen with many of these programs.
- The relevance of defining communities as geographical units can be questioned, as these entities can be heterogeneous, resulting in a weak sense of community that leads to insufficient community mobilization and inadequate program reach.
- The importance of multifaceted interventions, long term program view, and substantial resource requirements to attain program effectiveness is well supported by evidence, but these principles tend not to be widely or fully applied in program practice.
- There is a lack of research that links the principles of community member participation and intersectoral collaboration to program effectiveness.

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